

<b>Notice of Allowability</b>	Application No.	Applicant(s)	
	09/362,286	NADKARNI ET AL.	
	Examiner	Art Unit	
	Eileen B. O'Hara	1646	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 19 December 2005.
2. ☒ The allowed claim(s) is/are 44-48, 50, 51, 62, 67, 52-57, 59, 63 and 14, renumbered as claims 1-18 respectively.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. <input type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br/>Paper No./Mail Date _____</li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br/>of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</li> <li>6. <input type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date _____</li> <li>7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other _____</li> </ol> |
|---|--|

*Eileen B. O'Hara*

**EILEEN B. O'HARA  
PRIMARY EXAMINER**

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Dr. Melissa Hunter-Ensor on February 28, 2006.

The application has been amended as follows:

#### Claims with markings showing Examiner's amendment

1-13. **(Canceled)**

14. (Previously Presented) The receptor of claim 52, comprising an amino acid sequence LAYSNSSVNPIIYAFLSBNI(FRKR)IYKQV (SEQ ID NO:1) wherein said mutant amino acid motif within said sequence is (FRKR) (SEQ ID NO:2).

15-43. **(Canceled)**

44. **(Previously presented)** A mutant mammalian IL8A receptor having an amino acid sequence which differs from a wild type IL8A receptor having a wild type amino acid sequence comprising an amino acid motif (X<sub>1</sub>X<sub>2</sub>X<sub>3</sub>X<sub>4</sub>) proximal to the carboxy terminal end of said wild type amino acid sequence, wherein:

X<sub>1</sub> denotes an amino acid residue at position 1 of said motif and is selected from the group consisting of Phe, Leu, Val, and Tyr;

X<sub>2</sub> denotes an amino acid residue at position 2 of said motif and is selected from the group consisting of Phe, Lys and Gln;

X<sub>3</sub> denotes an amino acid residue at position 3 of said motif and is selected from the group consisting of Leu, Arg, Glu, Asn, Gln, Ser, Ala, Leu ; and

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X<sub>4</sub> denotes an amino acid residue at position 4 of said motif and is selected from the group consisting of Ala, Cys, Asp, Glu, Gly, Ser, Thr and Tyr; and wherein said mutant receptor comprises a seventh transmembrane domain with a carboxy terminal end; and

at least one amino acid mutation at a position in said amino acid motif, wherein said mutation is selected from the group consisting of: Arg to Trp at position 73, Met to Ile at position 246, and Gly to Arg at position 320, wherein upon interaction with a ligand to modulate a signal transduction pathway in a cell, a signal generated by said mutant receptor is greater than a signal generated upon interaction of said ligand with a wild type IL8A receptor.

45. **(Previously Presented)** The receptor of claim 44, wherein said cell is a yeast cell.
46. **(Previously Presented)** The receptor of claim 45, wherein said receptor acts as a surrogate for an endogenous yeast pheromone receptor in a pheromone response pathway of said cell.
47. **(Previously Presented)** The receptor of claim 45, wherein said cell belongs to the species *Saccharomyces cerevisiae*.
48. **(Previously Presented)** The receptor of claim 44, wherein said cell is a mammalian cell.
49. **(Cancelled)**
50. **(Previously Presented)** The receptor of claim 44, wherein said mutation comprises mutagenization at position 4 of said amino acid motif to Arg or to Lys.
51. **(Previously Presented)** The receptor of claim 44, wherein said ligand is interleukin 8 (IL8) or melanoma growth-stimulating activity-alpha (MGSA/GRO $\alpha$ ).
52. **(Previously Presented)** A mutant galanin receptor-1 having an amino acid sequence which differs from a wild type galanin receptor-1 having a wild type amino acid

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sequence comprising an amino acid motif ( $X_1X_2X_3X_4$ ) proximal to the carboxy terminal end of said wild type amino acid sequence, wherein:

$X_1$  denotes an amino acid residue at position 1 of said motif and is selected from the group consisting of Phe, Leu, Val, and Tyr;

$X_2$  denotes an amino acid residue at position 2 of said motif and is selected from the group consisting of Phe, Lys and Gln;

$X_3$  denotes an amino acid residue at position 3 of said motif and is selected from the group consisting of Leu, Arg, Glu, Asn, Gln, Ser, Ala, Leu ; and

$X_4$  denotes an amino acid residue at position 4 of said motif and is selected from the group consisting of Ala, Cys, Asp, Glu, Gly, Ser, Thr and Tyr; and

wherein said mutant receptor comprises a seventh transmembrane domain with a carboxy terminal end; and

at least one amino acid-mutation in said amino acid motif comprising Gly to Ala at position 320, wherein upon interaction with a ligand to modulate a signal transduction pathway in a cell, a signal generated by said mutant receptor is greater than a signal generated upon interaction of said ligand with a wild type galanin receptor-1.

53. **(Currently amended)** The amino acid motif of claim 52, wherein  $X_1$  denotes an amino acid residue at position 1 of said motif and is Phe;

$X_2$  denotes an amino acid residue at position 2 of said motif and is ~~selected from the group consisting of~~ Arg;

$X_3$  denotes an amino acid residue at position 3 of said motif and is ~~selected from the group consisting of~~ Lys; and

$X_4$  denotes an amino acid residue at position 4 of said motif and is selected from the group consisting of Ala, Cys, Asp, Glu, Gly, Ser, Thr and Tyr.

54. **(Previously Presented)** The receptor of claim 52 or 53, wherein said cell is a yeast cell.

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55. **(Previously Presented)** The receptor of claim 54, wherein said receptor acts as a surrogate for an endogenous yeast pheromone receptor in a pheromone response pathway of said cell.

56. **(Previously Presented)** The receptor of claim 54, wherein said cell belongs to the species *Saccharomyces cerevisiae*.

57. **(Previously Presented)** The receptor of claim 52 or 53, wherein said cell is a mammalian cell.

58. **(Cancelled)**

59. **(Previously Presented)** The receptor of claim 52 or 53, wherein said receptor comprises mutagenization at position 4 of said amino acid motif to Arg or to Lys.

60-61. **(Cancelled)**

62. **(Previously Presented)** The mutant mammalian G protein-coupled receptor of claim 44, wherein said amino acid motif commences 5-10 acid residues from the carboxy terminal end of said wild type amino acid sequence.

63. **(Currently amended)** The mutant mammalian G protein-coupled receptor of claim 52, wherein said amino acid motif commences 5-10 amino acid residues from the carboxy terminal end of said wild type amino acid sequence.

64-66. **(Canceled)**

67. **(Previously Presented)** The receptor of claim 44, comprising an amino acid sequence LGFLHSCLNPIIYAFIQN[FRNG]FLKM (SEQ ID NO:3) wherein said mutant amino acid motif within said sequence is (FRKG) (SEQ ID NO:4).

68. **(Canceled)**

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eileen B. O'Hara, whose telephone number is (571) 272-0878. The examiner can normally be reached on Monday through Friday from 10:00 AM to 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brenda Brumback can be reached at (571) 272-0961.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-1600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://portal.uspto.gov/external/portal/pair>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

Eileen B. O'Hara, Ph.D.

Patent Examiner



**EILEEN B. O'HARA**  
**PRIMARY EXAMINER**